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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,957	11/19/2001	Yasuyoshi Kuwazoe	7217/65965	9664

7590 06/04/2004

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EXAMINER

CHASE, SHELLY A

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 06/04/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

829

Office Action Summary

Application No.

09/988,957

Applicant(s)

KUWAZOE ET AL.

Examiner

Shelly A Chase

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5 and 7 is/are rejected.
- 7) ☒ Claim(s) 2,4,6 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 to 8 are presented for examination. Receipt is acknowledged of preliminary amendment filed 3-29-2002.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119, which papers have been placed of record in the file.

Drawings

3. Figures 1 to 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 to 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The claims are indefinite because, the independent claims (1, 3, 5, & 7) recite the limitation "immediately preceding a present timing of said plurality of processing timings to obtain computation results with said present processing timing for said 2ⁿ states" that is unclear. The examiner is not sure what the claim subject matter should convey. Claims 2, 4 6 and 8 are also rejected due to their dependency on a rejected base claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims **1, 3, 5 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno et al. (USP 6637004 B1) in view of Ikeda (USP 6381727 B1).

Claims **1, 3, 5 and 7**:

Mizuno substantially teaches a method and a circuit for error correction for a Viterbi decoding system, the method and circuit comprising: branch metric computing circuit [201] (" computation means") computing branch metric for received data (see col. 4, lines 5 to 10) and an add compare select (ACS) circuit [203] ("control means") includes a plurality of sub circuits wherein each sub circuit receives respective branch metric computations (see col. 4, lines 10 to 15). Mizuno further teaches the ACS circuit processes data in a 4-path parallel processing (see col. 7, lines 17 to 25). Mizuno also teaches computing new path metric from the preceding states (see col. 6, lines 11 to

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27) and determining the maximum and minimum path metric (see col. 4, lines 55 et seq.).

Mizuno does not specifically teach the received data are for a data train completing said convolutional encoding process; however, Ikeda in an analogous art teaches an apparatus and a method for receiving data associated with convolutional encoding and performing metric calculation on the received data (see col. 15 et seq.). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the decoding of received data of Mizuno to include computing metric for convolutional encoded data as taught by Ikeda since, Ikeda teaches the advantages of employing convolution codes (see col. 1, lines 35 et seq.). This modification would have been obvious because a person of ordinary skill in the art would have been motivated to employ a code that will yield effective coding gain with low signal to noise ration as taught by Ikeda. As to the other limitation of the claim, Ikeda teaches the receiver includes a Viterbi decoder performing the computation on the received convolutional encoded data (see col. 24, lines 52 et seq.).

Allowable Subject Matter

8. Claims 2, 4, 6, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art made of record teaches a method for decoding a received encoded

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data as detailed above; however, the prior art made of record taken alone or in combination fails to teach or fairly suggest or render obvious the novel element of the instant invention. Specifically, the prior art made of record fails to teach or fairly suggest a decoding method and a decoding apparatus comprising: a memory for storing said computation results obtained with said immediately preceding processing timing and said present processing timing, wherein during each of said processing units said computation results obtained for said 2^n states with said immediately preceding processing timing are read from a storage area of said memory" as claimed in dependent claims 2, 4, 6, and 8.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelly A Chase whose telephone number is 703-308-7246. The examiner can normally be reached on Mon-Thur from 8:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shelby A Chase